

THE MINERAL INDUSTRY OF MAURITANIA

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Iron ore mining and beneficiation was the dominant mineral industry in Mauritania, and has accounted for approximately one-third to one-half of export earnings since the mid-1980's. Gold recovery from the Akjoujt copper mine tailings continued. Cement and salt also were produced. The Nation's sole petroleum refinery, operating on imported crude oil, supplied about one-half of the country's petroleum product requirements. Mining accounted for 12% of the gross domestic product.

Public and private investment programs focused on iron ore extraction and beneficiation, gold recovery from copper mine tailings, intensified mineral exploration, and infrastructure development.

The Ministry of Industry and Mines' Office of Geological Research in association with France's Bureau de Recherches Géologiques et Minières (BRGM) continued several exploration programs during 1994. Principal activities were focused on gold exploration in the Tassia, Tijrit, and Inchiri regions.

The extraction and beneficiation of iron ore remained the nation's leading mineral industry. (*See table 1.*) Production of iron ore fell between 1989 and 1992 because of declining reserves and technical difficulties at the El Rien Mine concentrator. Output improved with the opening of the Roueissa/d'Khailat Mine in late 1992 and the M'Haoudat Mine in 1994.

Gold extraction from the Akjoujt copper mine tailings entered its third year with the bulk of production destined for export.

Mauritania's most vital mineral export commodity continued to be iron ore, accounting for 40% of all export earnings in 1994. Exports exceeded 10.3 million metric tons (Mmt). Shipments for the most part were delivered to the steel mills of the European Community (EC). The largest volume importers were France and Italy, each receiving nearly 3 Mmt; Belgium, 1.7 Mmt; and Spain, nearly 1.3 Mmt. Other mineral exports were gold and possibly small quantities of plaster products.

Petroleum product imports were approximately 1.5 million barrels (Mbb), accounting for almost one-half of consumption; the remainder was supplied from the refining of imported crude oil. Other mineral industry imports included about 125,000 metric tons per year (mt/a) of aluminum and copper semimanufactures, 3,000 mt/a of sulfuric acid, 2,000 mt/a of phosphate fertilizer, and about 12,000 mt/a of salt.

Gold was recovered from tailings by Mines d'Or d'Akjoujt (MORAK) at the Akjoujt copper mine. Investment capital for the gold recovery project included a \$3 million loan from the International Finance Corp., matched by \$3 million from MORAK shareholders in proportion to their equity. According to MORAK, the mine tailings totaled 2 Mmt with an average gold content of 3.1 grams per metric ton (g/mt). Iron ore mining operations were conducted by Société Nationale Industrielle et Minière (SNIM) in northwestern Mauritania. The Roueissa/d'Khailat surface mine, 8 kilometers (km) southeast of the Tazadit pit, was brought into production in 1992 with output in 1993, the first full year of production, approaching 2 Mmt. According to SNIM, the 30-Mmt ore body contained 64% to 67% iron. The proximity of the Tazadit ore crusher and rail loading equipment minimized development expenses.

The first production from the M'Haoudat deposit, 60 km northeast of Zouirat and 30 km from the existing railway at El Rhein, was realized in April 1994. SNIM anticipates that optimum output from this ore body is 6 million metric tons per year (Mmt/a) with sufficient reserves to maintain this production level for 20 years.

The Alexandria National Iron & Steel Co. and the Holding Co. for Metallurgical Industries, both of Egypt, along with Enterprise Nationale de Siderurgie and Ferphos, both of Algeria, have joined SNIM in signing a protocol agreement on the construction of an iron ore pelletizing plant to satisfy demands of direct-reduction plants in several Arab countries, including an Algerian plant that is proposed to come on-stream in 1995. The plant's capacity is planned at 5 Mmt/a of pellets with a 68% iron content. The project involves mining and beneficiation at Ayouj, 30 km north of F'Derik and 650 km from the port of Nouadhibou. Mining is anticipated at the rate of 11 Mmt/a. Iron ore exports were valued at \$185.2 million in 1993, compared with \$164.0 million in 1992.

Industrial mineral production was limited to salt extracted by Société Arabe des Industries Metallurgiques Mauritanio-Koweitiennes (SAMIA). SAMIA had been in liquidation in 1994. Until late 1993, gypsum was extracted from the N'Drahamcha quarry, 50 km northeast of Nouakchott. Salt was recovered from coastal areas near Nouakchott. Production, however, did not meet the fishing industry's heavy requirements; as a result, salt imports averaged 12,000 mt/a.

Although commercially promising phosphate rock deposits

have been discovered in remote regions of southern Mauritania, their development would require high infrastructure costs. Exploitation of the deposits for direct application to soils remained, however, under consideration.

Mauritania's sole petroleum refinery, Nouadhibou, was owned by the Société Mauritanienne d'Industrie de Raffinage (SOMIR) and operated under the technical management of Naftal, an Algerian oil corporation. The 20,000 barrels per day (bbl/d) capacity refinery, operating entirely on imported crude oil, supplied about one-half of Mauritania's demand for refined products.

Iron ore reserves, according to SNIM, are 155 Mmt of hematite ore ranging from 60% to 68% iron and 531 Mmt of magnetite ore ranging from 36% to 40% iron. In addition to these proven reserves, probable iron ore reserves in the western Guelbs amount to 980 Mmt. According to MORAK, copper ore reserves amount to 100 Mmt averaging 2.25% copper and have a gold content averaging 1.17 g/mt. Adjoujt Mine tailings are reported at 2 Mmt averaging 3.1 g/mt of gold.

A major barrier toward investment and development was the Nation's limited infrastructure, which renders all but the largest deposits uneconomic. There were four paved roads in Mauritania: from the port of Nouakchott to the copper deposits at Akjoujt in the north, from Nouakchott to Nema in the east, from Nouakchott to Rosso in the south, and from Boghe to Kaedi on the southern border. The sole railroad in Mauritania was owned and operated by SNIM for the transport of iron ore from the mines to the export terminal. The 1,435-meter standard-gauge railroad extends more than 700 km from M'Haoudat to the port at Nouadhibou.

Existing and proposed mining operations suggest an improved outlook for the Nation's economy. Favorable

results, however, are largely dependent on the successful development of the M'Haoudat iron ore project, which would ensure continued mining for the next 20 years. However, the ultimate success of this project is dependent also on favorable world iron ore prices. The EC provided \$3.5 million for a prospecting program focusing on identifying gold and silver deposits that can be slated for private investment and development.

Factors bearing on the availability of financial support for the mineral economy include the border disputes between the Governments of Senegal and Mauritania, the Nation's heavy external debt burden, and significant fiscal balance of payments deficits. Although gold exports have commenced, the small scale of the Akjoujt gold recovery project, valued at about \$8 million, will not seriously affect Government revenues or the balance of trade, but it does represent new foreign investment and a diversification of the country's exports.

¹Text prepared Apr. 1995.

²Where necessary, values have been converted from Mauritanian ouguiya (UM) to U.S. dollars at the rate of UM113.1=US\$1.00.

Major Sources of Information

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TABLE 1
MAURITANIA: PRODUCTION OF MINERAL COMMODITIES 1/ 2/

Commodity 3/		1990	1991	1992	1993	1994 e/
Cement e/	metric tons	90,000	90,000	90,000	90,000	100,000
Gold	kilograms	--	--	826	1,200	1,740
Gypsum	metric tons	8,000	2,840	3,100	3,240	--
Iron and steel: Iron ore:						
Gross weight	thousand tons	11,600	10,300	8,200	9,360	11,400 4/
Iron content e/	do.	6,800	6,500	5,330	5,700	7,000
Petroleum refinery products	thousand 42-gallon barrels	2,000	1,800	2,000	2,000	2,000
Salt e/	metric tons	5,500	5,500	5,500	5,500	5,500

e/ Estimated.

1/ Previously published and 1994 data are rounded by the U.S. Bureau of Mines to three significant digits.

2/ Table includes data available through Mar. 15, 1995.

3/ In addition to the commodities listed, modest quantities of unlisted varieties of crude construction materials (clays, sand and gravel materials (clays, sand and gravel, and stone) presumably were produced, but output was not reported quantitatively, and available information is inadequate to make reliable estimates of output levels.

4/ Reported figure.